THE HORTICULTURIST

Vol. 24. MARCH, 1869. No. 273.

Practical Hints to Fruit-Growers.

BY H. T. WILLIAMS.

No. 3.—How to plant Fruit-Trees.

EXPERIENCED fruit-growers and horticulturists need little information from public journals as to the proper planting of their fruit-trees, but every year witnesses a large number of new beginners who know very little on these points, and must take sound advice or inevitably meet with disappointment.

There is a large class of farmers, also, with whom the cultivation of a few fruit-trees is a side issue, yet, notwithstanding the progress of horticulture and the evidences of general agricultural improvement everywhere around us, there still remains a lamentable ignorance and neglect in the planting and care of fruit-trees.

It seems a very simple thing to plant a tree, and almost every farmer thinks he knows how to do it, but it is seldom well done. It is a more important operation than is generally supposed, for the life of the tree and all its future health and fruitfulness are directly dependent upon it. Right planting is the foundation and corner-stone of all successful horticulture; for if a man commences his life and experience by building up from this small element, the probabilities are that he will be sure to understand and master thoroughly the knowledge of all the subsequent arts to produce vigorous trees and abundance of fruit.

More than one half of all the fruit-trees planted in this country die or fail to yield fruit, for the simple reason that they are not properly cared for. Fruit culture means something more than leaving a tree to take care of itself; it demands care, watchfulness, patience, hard work, strong efforts, and above all, intelligence and forethought.

It often happens that the very same man who bestows most care on his family, supplying them with every comfort and means of education and taste, or providing for the well-being of his cattle and dumb animals, will still neglect his fruit-trees, do the very thing he ought not to have done, and neglect all those precautions which should be taken to make his orchard eminently successful.

Not long since there lived an enterprising farmer near Boston, who bought one hundred fruit-trees to plant for an orchard. Wishing to have them live and thrive well, he hired a professional gardener to come and plant them. In the morning he went away, leaving the gardener at work, thinking he would make rapid progress and do every thing well. But when evening came and the farmer returned, there stood only *ten* trees planted out of the entire one hundred. Sadly disappointed at the prospect of such

slow work, and with feelings of anger that it was done at the high price of $2 per day, he dismissed the gardener, and concluded that he and his "hired man" could do it fully as well in much less time, and at one half the expense. So it was done. Mark the result.

Ten years afterward, the same farmer was at work one day in the same field, when a gentleman just riding past stopped short, and got out to examine the trees. After looking attentively at the orchard a few moments, he asked the farmer "why all the orchard did not look as well as the first row of trees? That row is three times as large and thrifty, while the rest of the orchard is small and dwarfish in appearance." The farmer replied, "They were all planted at the same time; those ten, which are so large, by a gardener; the rest by myself and my hired man. I thought the gardener too slow and charged too much, and dismissed him; but if I had paid him any thing he asked, and let him plant all the trees, any one of them now would alone have returned the entire cost."

The gentleman smiled and observed, "*I am that gardener*, and I thought you would find out sooner or later that it required more knowledge to plant out an *apple-tree* than a *post*."

The experience of that man is identical with thousands of others, but a more salutary lesson can be learned from the wonderful efforts of an amateur Wisconsin fruit-grower.

Late in the month of May, this remarkable man harnessed up his team, and went to a neighboring nursery. The sun shone bright, and the wind was blowing a stiff breeze. He purchased his trees cheap, for every other buyer had picked them over, and he piled them into his wagon. No regard was paid to the adaptation of varieties to his locality. There were his fifty trees, and that was all he wanted. No covering was placed over the roots. Of course they were badly dried. The stems and branches were seriously barked by the wagon-box in jolting over a rough road.

Arriving at home, he found the cattle had broken out and must be hunted up. In the morning the fence had to be repaired. At last, in the forenoon the trees were reached, having stood out all night exposed to the wind. The wagon was driven around the field, and the trees dropped where they were wanted. In the course of the day small holes were dug, and the trees, with cramped roots, were tramped into them, and the branches left at full length.

The first year one third died. The next winter the rabbits barked a number. Two or three that did not get a fair start died. The next season suckers were allowed to grow to keep off the rabbits. Four years from planting, one half of the trees had died. The orchard was then seeded down to grass, and the seventh year only a dozen remained. The next winter was severe, and left only three trees unharmed. These were without labels, and of unknown varieties, but proved a worthless fruit.

Behold in the death and failure of these fifty trees a monumentary evidence of man's neglect and ignorance!

But how was it with one of his neighbors?

Going to a reliable nursery, he selected thrifty trees, with a choice of such varieties as were known to be hardy in latitudes north of him. He carefully protected their roots from drying, shortened in the tops to compare with the abridged roots, and planted them carefully in a well-plowed, mellow soil. He kept the ground in cultivation, and carefully guarded his trees from insects and disease. To-day he has a fine orchard, yielding several hundred bushels yearly.

I can repeat many instances like this, and I can again point out thousands of orchards which have proved failures from want of practical knowledge and careful thought. It has seemed to me reasonable to throw out a few hints, in a condensed form, which shall prove a help to beginners, for there are many every year, and also to assist those who are among the afflicted already.

1. Plant *young* trees, both in your orchards and gardens. They cost less in actual price, in freight, and in planting than older trees. They are surer to grow, have more and better small fibrous roots, will adapt themselves quicker to the soil and location, and with equal watching and care will grow so vigorously as to excel older trees both in abundance of fruit, size, health, and earliness of bearing. Never choose standard apples, pears, plums, or cherries more than two years old, and dwarf trees one year old.

After years of experience, growers of fruit on an extensive scale can not be induced to plant trees older than one or two years. Farmers will see the double advantage of less price and less trouble in planting young trees.

2. Be careful in your choice of *soils.* A sandy soil is leachy, contains no moisture, and is liable to drought. A very heavy, clayey soil is directly the opposite—too wet, tough, and adhesive; few or no fruit-trees do well in it. A gravelly soil is hardly more desirable; but a deep, loamy, or alluvial soil may always form a good choice.

3. Let the land be well *drained.* Never plant where there is the remotest chance for water to settle and stand near the surface. It will surely ruin the tree and blight all hope for fruit. A few dollars spent in draining will be like the Scripture maxim, "It will return after many days."

4. When you are ready to plant, hitch up two teams. Let the first plow to the depth of one foot, a strip six feet or more wide. Let the second follow with the subsoil lifter, and stir to the depth of two feet; cross-plow in the same manner a strip of same width; then dig holes one foot or more deep, three feet in diameter; place the tree at the same depth as when removed from its former place; replace the earth, taking care not to bend or cram the rootlets of the tree, and always allow abundance of lateral room for the growth of the roots. Many inexperienced persons lose their trees from too deep setting. *No tree should be set lower in the earth than its original position.*

Where the ground has not been plowed and subsoiled, the planter must invariably dig his holes two feet deep and four or more wide.

5. Mix with the earth, before it is returned to the hole and is placed around the roots of the tree, a good compost of ashes, well-rotted stable manure, and chip manure mixed together. Leaf-mould, muck, and lime may all form part of the compost. Let a large portion of the compost be placed beneath but not in contact with the roots of the tree, and the remainder on the surface of the ground, to act as a mulch. The quantity will vary, according to the size of the tree, from a half-bushel upward.

The effect will be most marked, and the growth astonishing.

6. If any of the roots are mutilated or bruised, pare them off with a sharp knife to prevent decay; cut back on the under side until you reach the sound wood. Nearly all trees that come from the nurseries have lost some of their roots, and their branches must be shortened in the same proportion. At the time of planting, prune all branches back to three or four buds from the base of each branch.

7. All large trees will require *stakes;* young trees firmly set will not. Where stakes are used, fasten them in the ground first, then plant the tree by its side, and carefully tie it, so that it will not chafe.

8. *Mulching* is almost indispensable. The earth should rise like a small mound toward the trunk of the tree, and over this should be a mulch two inches deep of hay, half-decomposed manure, sawdust, or tan-bark. It not only saves the labor of cultivation, but prevents the moisture of the soil from evaporation, renders the temperature more uniform, and prevents injurious effects from frost. The mulch should extend beyond the tips of the roots.

9. Opinions differ as to choice of spring or fall for planting. If planted in the autumn, the earth gets fully settled around the trees, and the next spring finds them ready to start and grow with vigor.

Equally good results are, however, obtained by careful spring planting. Early purchases of trees are absolutely necessary, for frequently unscrupulous or careless dealers do not hesitate to dig up trees from the nursery even after buds have commenced their growth; to say that these prove a loss is to repeat a story of old and costly experience.

10. *Cultivate the ground carefully;* never allow grain crops, nor root crops of an injurious nature, to grow in the field. Neither allow grass nor weeds. The cultivation and manuring incident upon the growing of some kind of judicious crop between the rows, as potatoes, or beets, or turnips, will always prove a benefit. If no crop is grown, go through frequently with the cultivator, and stir the soil two or three inches deep. A thorough mellow stirring of the soil is nearly as good as manure.

11. If trees are dried by too long carriage, they may be restored by immersion for a day or two in water or thick mud.

12. Use no water in planting; it tends to harden and bake the surface of the earth, and has always proved injurious. Mulching will supply all the moisture necessary.

13. When you buy your trees, patronize no traveling swindlers, but obtain them from some reliable nursery. If possible, visit it, and make your own choice of trees, and label them with your name.

14. Examine the branches and roots carefully and continually for insects, worms, or borers. Do it at least three times each growing season.

15. Let the orchard be protected from all prevailing cold winds, whether from east, west, or north.

Lastly, *careful pruning* is essential, which means no Herodian slaughter of innocent sufferers by lopping off large, healthy, vigorous branches, and a general slashing, but does mean the cutting out of all dead or diseased branches and roots, and only such smaller shoots and branches as appear to prevent the free access of sun and air to all parts of the head of the tree.

If farmers would only cultivate their trees as well as their corn, they would have little occasion to utter complaints against poor orchards or poor fruit. How carefully does the possessor of a nasty Connecticut tobacco-patch take care of it! He hoes it every week during the season; he is up early in the morning looking after those hateful worms; but right there by his side stands a fruit-tree, the noblest sight upon his farm, a gift from Providence, which might be a cheer and a blessing to himself and little ones, but is left to die of disease and neglect because it was not made like man, and could not take care of itself.

An hour's time and a dollar's worth of manure will often cause a barren tree to put forth renewed energy, giving principal and compound interest back again. But how much better will it be if all will only *start right* and *keep right;* how little cause there will be for censure, and how much more comfort!

Grape-Growing in New-Jersey.

BY WILLIAM PARRY.

GRAPE-GROWING in West New-Jersey has been attended with various results for many years past, which has led to the conclusion that it is not a reliable crop, and some have maintained that our soil and climate were not well adapted to it. But the occasional heavy crops which have been produced are sufficient to prove that the defect is not in the soil or climate, but in the want of a proper system of pruning and manuring. We find no difficulty in growing one or two large crops of grapes, and some more inferior ones, when the vines, being exhausted, run out, are neglected, and their culture abandoned.

A few sample vineyards may serve to illustrate this matter. About thirty years since, Henry M. Zollicoffer, of Philadelphia, had planted, in Camden county, New-Jersey, eight or ten acres of vineyard on light sandy soil, good truck land, quick in its action to yield up what nourishment it contained to the growing crop, but soon reduced unless constantly supplied with manure. The vines grew well and produced one full crop of fruit; fine large bunches, well developed and ripened, which were greatly admired by visitors and all who saw them.

That large crop of grapes took most of the strength from the ground, so that there was but a poor growth of wood for a future crop. Next year, there were grapes enough set upon the vines, but about the time they should have ripened they commenced rotting, showing clearly there was something wanting to fill out the crop. The next year it was even worse, and after that they were abandoned as of no value. Some years after that, Mr. Fletcher, of Delanco, N. J., had a grapery which yielded abundantly for several years; they were planted close, and pruned short, and seemed for a while to be suc-

cessful ; but eventually, the soil becoming exhausted, they gave way, failing to ripen the fruit, were dug up, sent to Philadelphia, and sold at auction at high prices on the credit of the crops which they had borne.

In the year 1844, I planted one eighth of an acre with Isabella, Catawba, and Elsingborough. Set posts and wires to support the vines. They grew finely and produced several fair crops, the best of which was 1250 pounds, or at the rate of five tons per acre, which sold at six cents per pound, and brought $75, or at the rate of $600 per acre. But that was too heavy a draught upon the vines and soil ; they gradually diminished afterward, until, being of little value, were removed.

Now, so far from being discouraged by the observation of these facts, we should look upon them as landmarks to guide our future operations. We could not raise half that quantity of corn or other farm crops, year after year, upon the same ground without replenishing the exhaustion annually with an application of manure.

I have now a small vineyard in bearing, embracing several varieties, one row of a kind, which have borne three good crops of fruit, and made the last year a better growth of well-ripened wood than ever before. The ground, a sandy loam with clay subsoil, was plowed deeply with a Michigan or double mould-board plow. The plants were set eight feet distant, in rows six feet apart, and but one cane was allowed to grow the first year. Trellises were erected by planting posts eight feet long, set two feet deep, and eight feet apart in the rows, with one rail (two by three inches) on top of the posts, and another fastened two feet from the ground, with wires extending from the lower to the upper rail, about ten inches apart, to support the young vines.

In the spring of the second year after planting, the cane which grew the first year was cut off even with the lower rail, and only the two upper buds allowed to grow, one in each direction. In the spring of the third year each of these canes was cut off about three and a half feet long, and one cane allowed to grow up each wire, the laterals or side branches being removed as they made their appearance during summer. In the spring of the fourth year the top of every other upright cane was cut off even with the top rail, and allowed to produce fruit ; the alternate canes are cut short near the arm by the lower rail, from the base of which a strong cane is thrown up to produce fruit the following year ; the one that had fruited last should then be removed, and allow a new growth from its base to produce fruit the next year, and so on alternately removing the wood that has borne fruit to give place for a new growth. The object in pruning being to control the growth of the vine, so that its strength shall be properly divided between ripening the present crop of fruit and producing a strong, healthy growth of wood, with well-developed buds for fruiting another year. Hence the error of taking an overcrop of fruit at the expense of a proper growth of wood.

The above method of training and pruning answers well, is simple, and an ordinary hand can do the work after once being shown how. Having about forty varieties of hardy grapes growing, the larger portion of them have done well with the above treatment.

But the Concords and Hartford Prolifics have yielded the most money in market.

In the year 1866, the row of Concord vines produced at the rate of six tons of grapes per acre, which took an undue portion of their strength, leaving but little for the new wood, which made but a feeble growth, and not well ripened, and, in consequence, yielded no fruit of value in 1867. But a heavy coat of stable manure and judicious pruning replenished strength to make a fine growth of wood, which gave a full crop of perfectly ripened grapes in 1868.

The Hartford, ripening early, sold best, bringing twenty-five cents per pound, and yielded at the rate of nine hundred dollars per acre.

We apply manure every year, same as for potatoes and other farm crops ; could hardly expect to gather much fruit if we put nothing on to produce it.

The demand for table grapes is increasing faster than the supply. Twenty years ago my crop of grapes from the one eighth of an acre above referred to sold in Philadelphia at six cents a pound. Last year my crop averaged fifteen cents per pound in the same market, and one salesman informed me that he sold from his fruit-stand ten thousand dollars' worth of grapes, last fall.

View of the School-House at Little Blue, Farmington, Maine.

Design for a District School-House.

Country School-Houses.

IN our country districts where due attention is given to solid mental instruction for school children, we think that, if pains were taken to surround the school-house with objects which minister both to taste and enjoyment, a valuable aid will be gained in the healthy discipline of every school. More than this, too, if every town possessed a school-house of neat and tasteful architecture, there is inspired and cultivated a sense of beauty, which not only acts beneficially in the conduct and improvement of the scholars, but manifests itself by reaching far out toward their homes, and adding here and there in home surroundings evidences of a growing taste for rural ornament. Ever since Downing commenced his illustrations for the improvement of rural architecture, both school-houses and churches and private dwellings, the feeling has been fostered and stimulated in all parts of the country, that, if the old, plain, bare school-houses were taken away and replaced with structures of more taste and conveniences, the benefits on the children and the surrounding community will be such as to warrant every expense. On the opposite page, we give an illustration, from life, of a school-house at Farmington, Maine. It is more directly a private institution than public, being connected with a boarding-school named Little Blue. A glance at the engraving will show that the house is neat and convenient; but the tasteful hand of the proprietor has gathered around many additional elements for the active enjoyment of his pupils. The site is of great picturesque beauty. Around the building are gathered various pleasure-grounds for exercise, the railway, the ball-ground, the swing, etc. Were every school in the country as favorably situated, not a member would ever leave the school without a feeling of pleasant remembrance.

If, for one reason or another a boy or girl can be induced to *love the school*, more than half the battle is fought in giving him an education.

Our second illustration is from the columns of the *N. E. Farmer*, presenting a design at once unique and graceful, intended as a district school-house.

Another element of pleasure can be given to the scholars by inducing them to bring creeping vines and plant them by the sides of the house. Their own responsibility will

lead them to care tenderly for them, and when fully grown and twined gracefully around the windows or over the porch, the beauty of their looks will hardly excel the intense gratification of the donors.

New Winter Pear—Duchesse de Bordeaux.

BY J. S. HOUGHTON, PHILADELPHIA, PA.

I TAKE pleasure in introducing to the notice of pomologists a new winter pear, which I believe will be found to be worthy of general cultivation.

The history of this pear is as follows: About eight years ago, I imported a number of these trees from France, with some other varieties, and planted them in my specimen grounds near Philadelphia. The trees were three or four years old, on quince stock, and fruited the second season, very abundantly. I was much struck with the bright, robust appearance of the trees, and with the size and beauty of the fruit, and watched the trees with much interest.

The description of the trees and fruit as sent out by Andre Leroy, Angers, France, was as follows:

"DUCHESSE DE BORDEAUX PEAR.—Medium-sized, two and a half inches long and seven and a half in circumference; form roundish, irregular, imbricated; very often swollen on one side, flattened and sometimes even; drawn in on the other, and divided from the latter by a deep suture, which reaches from the eye to the stem; it is dented and its surface is uneven. The stem is about three quarters of an inch long, bent and planted in its surface, but bearing at its insertion, on one side only, a small nipple, fully characteristic. The eye is large and big enough, placed in a deep cavity. The skin is very thick and rough, of a deep brownish yellow, but some parts of it are, however, of a lighter yellow. As to the form and color, it bears some likeness to the Fortune Pear. The flesh is of a yellowish white, fine and melting, sweet and very juicy. It is a delicious pear, equal in quality, and is in truth superior to any kind of winter pear, without excepting the Easter Beurré. It begins to ripen in February, and continues in perfect state through March and April. Originated by M. Secher, near Angers, from a lot of wild pear seeds. It is very productive."

The fruit produced on my trees was of large size, resembling in form the Beurré Diel and Doyenné Boussock. There was one peculiarity about the fruit which led me to think it would be a good keeper, and that was the extreme thickness and toughness of the skin, which had a thick *twilled* appearance like the skin of some Havana oranges. I had formed the opinion that no pear with a thin, delicate skin, easily bruised, could ever become a good keeper for winter use.

For several years I tested the keeping qualities of this pear by putting it in stone jars in a common cellar, and in boxes in cool rooms, with no special packing or other care, and found it to keep till February, March, and April, sound and good; and to ripen up and color, in a melting condition, overflowing with rich, sweet aromatic juice, delicious and refreshing, and nearly first-rate in quality as compared with all pears, and positively first-rate as compared with winter pears.

The tree I found to be a very strong grower, resembling, in its appearance and the color of the wood, the Duchesse d'Angoulême, the Bartlett, and the Edmonds. It resembled these trees just named also in size and number of its fruit-buds, and in its astonishing prolific and fruitful tendency. I soon discovered that it would never fully prove its good qualities on the quince stock, as it had such a fatal tendency to overbear while young, and the union with the quince root was imperfect. I then commenced to double-work it by grafts, and ordered a quantity budded on pear stock by nurserymen in Western New-York.

The trees have continued to bear every year, when almost every other variety has been injured by spring frosts, and the fruit has been fair and satisfactory. The skin is so tough and dense that the curculio seems, by instinct, to avoid it as an unfavorable resting-place for its eggs, and hence it is less marked with crescent cuts than other pears.

Fungus, also, does not appear to find a congenial soil in its outer coating, and thus it escapes the unsightly black spots of that destructive excrescence.

I have a large number of trees and grafts of this pear now ready for bearing, and hope, at the meeting of the National Pomological Society, next autumn, to be able to exhibit some good specimens of the fruit. I know of no winter pear which can compare with it for size, beauty, keeping qualities, and general excellence, and no tree more hardy, thrifty, robust, and fruitful.

In 1866, I wrote to Andre Leroy, making inquiries respecting the success of this pear in France, and received the following answer:

"ANGERS, FRANCE, August 7, 1866.

"The Duchesse de Bordeaux Pear was raised by M. Secher, at Montjean, near Angers, about twenty years ago. He had the kindness, about six years ago, to offer us some specimens of the fruit, and some scions of his tree, to propagate it. We find the fruit very first-rate, and one of the most precious winter pears. It keeps till March and April in a perfectly good state. It is a good grower, both on quince and pear stocks, and also a good bearer. It is but very little known, nevertheless its reputation is increasing among all persons who have tested it. It has not yet fruited with us on pear stock. We have great confidence that this pear, when more extensively known, will become one of the most favorite with the public. It is as yet little known out of France.

"Yours very truly, ANDRE LEROY."

I may add that this pear has not been mentioned in any English or American catalogue or pomological work, and there is, I believe, no synonym of it. The "Duc de Bordeaux" mentioned in some catalogues is not the same. The Duchesse d'Hiver resembles it in wood and buds, but I am satisfied that it is not the same tree. Dr. Hogg, in the English *Manual of Pomology*, does not mention it, nor does Mr. Rivers in his lists.

I have no trees for sale. I have supplied buds to two nursery firms in Western New-York, who have budded some hundreds of trees on pear stock, at my request, and who will in due time, no doubt, announce trees for sale, on their own account. For myself, if I shall be the means of introducing to public notice a fine winter pear, of large size and high quality, which can be grown by every body and ripened up with little care and skill, like a russet apple, I shall feel abundantly rewarded for the care and attention which I have given this tree.

Notes on New Blackberries.

BY THE EDITOR.

IN our editorial rambles, last fall, in the neighborhood of New-York, we discovered in the grounds of a friend a variety of the blackberry which for its dark luxuriant growth and hardiness excited our closest attention and deepest interest. It seemed to promise a decided acquisition to our list of blackberries, and evidently, as far as grown and tried, bore marks of a superiority to all others by its side. In comparison with the Wilson, Kittatinny, and Lawton, the rank growth of this "stranger" afforded a very strong and pleasing contrast. The variety was named "The Sable Queen." The following particulars of its origination and growth we have obtained from J. W. M., Reading, Mass., and place them before the public:

"More than twenty years ago, Mr. Daniel Graves (now deceased) frequented an old pasture in Essex Co., Mass., in the season of fruit, to obtain berries for family use.

"He observed, season after season, a single bush or cluster of blackberry bushes, every year excelling all surrounding plants in amount, size, and quality of fruit. He dug it up and planted it in his garden. Here it outstripped its former self, and produced an abundance of berries infinitely superior to any thing then known.

"The neighbors near Mr. Graves from time to time obtained the popular sorts as they appeared, but not always with eminent success. Learning of this variety in Mr.

The Sable Queen Blackberry.

Graves's garden, they solicited and obtained several plants each, which were tested on the same soils with all the other distinguished varieties. "The Sable Queen" proved completely acceptable, even to the exclusion of many others.

"Four years since it came into the hands of the present possessor. It has thus far been generally tested on *light soils*. Blackberries generally bear their largest crops on stronger soils. This variety will probably do the same; but on the soils wherever tried, it has yearly afforded abundant crops. Grown on the same soil with other varieties, its *hardihood* was unexcelled. In firmness of berry, an indispensable item in marketing, it is declared superior. When black, it is in fine eating order. In richness of flavor and general good quality, it is all that can be expected of a blackberry. If it has a fault, it is this, that on some of the berries a single seed or lobe does not color up as black as the balance of the berry. Whether this is an objection or not, it is a distinguishing test, and will serve to identify it completely if it is perpetuated."

The Dorchester, Lawton, Wilson Early, and Kittatinny, all have grown gradually into the public estimation, and now when a new variety appears and stands in comparison with them it must be subjected to an extended trial, and meet with public favor according to its merits. Local authority is quoted liberally in support of the Sable Queen, but unanimous *national* authority is necessary to render any new-comer welcome.

What we have editorially seen thus far has pleased us, and if the fruit justifies our anticipations we can call it a worthy acquisition.

The Crystal White Blackberry.—A careful friend writes us that "he has grown four or five varieties of the White Blackberry, and none of them are worth cultivating for any practical purpose. The Crystal White is perhaps the best. It bore with me a few white berries as clear as a White Grape Currant—quite a novelty, but of little value. My plants are half-killed to the ground now. We consider the variety practically useless."

Thus ends one "*horticultural novelty*."

Missouri Mammoth.—We have made constant inquiries as to the merits of this formidable novelty, and confess ourselves quite as much in the dark as before its appearance. Not one has yet reported to us concerning its bearing qualities; none have seen it in fruit. Its growth is rank enough, but there hangs a strange mystery around it that leads many to repudiate it altogether; one season more will develop its qualities, be they good or bad.

Dodge's Thornless.—A variety in the possession of N. E. Dodge, Fredonia, N. Y., is not yet disseminated. Period of ripening, from the 15th to the 20th of August; described as possessing a good habit of growth, entirely free from thorns, hardy, and productive."

The Wachusett Blackberry.—A new blackberry, described as entirely thornless, now in the possession of Rufus R. Fletcher, Groton Junction, Mass. Mr. Fletcher states that "it was discovered wild on Monadnock Mountain, five years ago, does equally well on a light or a heavy soil, and has fruited regularly when others failed; possesses a compact habit of growth, very productive, and fruit of large size."

A blackberry which shall possess the qualities of even an average variety, but exempt from thorns, will be counted something decidedly novel and worth trying. We have not seen this variety, and can not indorse this or any other fruit unqualifiedly, until tested satisfactorily on the editor's own farm.

Cyclamen Persicum.—This is one of the best plants we have for window culture, succeeding admirably in any dwelling where a temperature above 50 degrees is maintained. Its delicate graceful flowers are borne in profusion, elevated well above the leaves, and are very enduring; a single bud continuing to flower from November to March. The Cyclamen can only be raised advantageously from seed, which should be sown now as soon as procured, and the buds kept growing through the coming summer. If well cared for, they will be in bloom the following winter. The bulbs or corms can be kept for many years, constantly increasing in size and beauty, if planted in the open border in the spring and lifted and potted before frosty nights in the fall.

Trees Girdled by Field-Mice—How to Save Them.

THE obstacles that the practical horticulturist has to contend with are numerous. If he wishes his orchards to produce paying crops of fruit, he must be constantly on the alert, bestowing care on this or that pet tree, removing a branch from another, using the pruning-knife for some special object, either to retard or encourage its growth in a certain direction.

The labor is not at all times arduous, but constant watchfulness is required, and sound knowledge of the business, before the thousand and one annoyances that are constantly occurring can be mastered.

No experience of the horticulturist is so dismal or discouraging as when, entering his orchard soon after snow disappears in the spring, he finds that his trees are badly injured, and many fatally so, by the ravages of those abominable pests, the field-mice.

The winters of 1867 and 1868 were the most severe, and, in many respects, the most remarkable known in this section for many years. From early in December, snow-storms followed each other at short intervals, usually accompanied by heavy wind, in certain places drifting and piling up the snow several feet high. About the first of March nearly all of our pear orchard lay under a bed of snow five feet in depth, a part of which lay on the ground until the beginning of April. When the surface was clear, I soon found, on examination, evidence of the activity of these mice. Forty-one pear-trees were girdled—some half-way round the body, others having but a narrow connection of bark left—and to my great dismay twenty-six trees were completely girdled, for which I would not entertain an offer of $500. There were a number barked two feet above the surface of the ground, and some of the main branches were girdled badly.

Under the circumstances, it was imperative that something should be done. If left as they were, the trees could not survive. On all of them the bark had been most effectually removed, leaving a bare place of wood twelve inches wide without any connection.

Some years ago, in hunting up horticultural curiosities, I had found, to my surprise, on the farm of John Brill, near Newark, a large cherry-tree, then about ten inches in diameter, that when young had been girdled, and he had inserted three scions in an upright position. The tree was living, and looking perfectly healthy, supported on three short columns, with the portion of the body that had been girdled, dead and removed, showing an opening in the centre of the tree between the columns.

I now set to work and prepared the scions by beveling them on the same side at both ends, and with a budding-knife making an opening both on the upper and lower edges of the bark. On each tree that was completely girdled I inserted three scions, and where there was only a small connection of bark left, I inserted one scion. I fastened them by a band the same as we use in budding, and then put on some grafting-wax, so that the air would be excluded when the ends of the scions were inserted.

The adjoining cut is an accurate drawing of one of these girdled trees, at the end of the first season. There were three scions inserted in this tree.

By this simple means every one of the trees was saved, and to-day they look as healthy and vigorous as any in the orchard. On this occasion, however, I found the trees that were injured were those growing in or near grass, and although I traced the paths of the mice on different parts in the orchard, no tree that had stood in plowed ground was injured.

The knowledge of this fact I consider valuable; for in the future I will keep the surface of the ground entirely free from grass. P. T. Q.

City Gardens.

BY A. S. FULLER.

Read before the Fruit-Growers' Club, New-York.

THE idea is becoming far too prevalent that because people live in a city they are to be deprived of the pleasures of a garden. The science of gardening does not teach that a certain number of acres is requisite, nor that stately trees with rugged stems, meandering streams with grassy banks, are indispensable adjuncts to every garden. It is true that many of our works which pretend to teach this science ignore the wants of the millions who live in cities where broad acres are not to be had for the asking nor for a paltry sum of money. It is quite probable that our authors, having read so much about "London smoke" and its injurious effects upon plants, have overlooked the fact that in *our* cities no such evil exists, at least not to any considerable extent.

There are many persons who will no doubt scoff at the idea of a garden where land is so precious as it is in New-York; but there are vacant places which might be filled with plants, and thus become both useful and ornamental, neither of which can be said of them in their present condition. Besides this, it is not always necessary to make a garden directly on *terra firma*, because plants can be grown in pots or beds of soil, elevated above the streets. A garden on Broadway might be an expensive luxury at the present day; still there is a garden on this noted street, and, we presume, the owner is perfectly satisfied with its location and the profits derived therefrom. Our object, however, at this time, is not to urge our city people to grow plants as a financial speculation, but merely for pleasure; not only for the amusement and benefit of the owner, but for the purpose of increasing the attractions of home, where their children will prefer to spend their leisure hours, instead of wandering through the streets, gathering a kind of knowledge that will seldom benefit them in after life. A small garden of only a few yards in extent, or a conservatory filled with choice plants, will furnish an endless source of amusement, and of a kind that never dwarfs the intellect, because an acquaintance with the beauties of the floral world tends to elevate as well as instruct. There are thousands of wealthy men in every large city who would rejoice in the thought that their sons would be known at some future day as honored and celebrated naturalists; but I would ask them if they are making the first move toward creating or encouraging a taste in their children for natural objects? Have they given their sons an opportunity of studying any of the natural sciences? Do they subscribe for any of the horticultural or botanical journals? Is the *Naturalist* or *Entomologist* to be found in their libraries, and are the works of Agassiz and Darwin purchased in preference to the historical novels of Louisa Mühlbach?

The immortal Linnæus had far less opportunity for the study of his darling science (botany) than thousands of the young men of our city have at this day; yet I fear that few of them will ever know enough of horticulture or botany to give the scientific name of the weed from which their cigars are made.

ADVANTAGE OF A CITY GARDEN.—Among the high walls of buildings and high fences that usually surround city yards the atmosphere never becomes so cold as it does in the suburbs, or in the open country adjacent; consequently, there are many plants that will thrive in our city gardens that perish in the country. Materials for fertilizing the soil are always abundant or near at hand in the city, and no plant need perish for want of food.

DIFFICULTIES TO BE OVERCOME.—The soil in our city yards, as a general thing, is entirely unfit for the reception of plants. It is usually very poor, besides being cold, damp, and very compact, needing a liberal application of enriching materials, deep trenching, and quite often an underdrain leading into the sewer in the street. But those who are determined to have a garden will overcome all these difficulties, and enjoy the necessary preparations, because so full of hope and dreams of pleasure to be reaped in the future. In some instances it may be necessary to send for a few loads of virgin mould, to be had even at no great distance from the centre of our largest cities. Insects and dust will often annoy those who attempt to grow flowers in a city; but water, the

great promoter of life among plants as well as destroyer of insects, is always at hand to do its work, if properly applied.

PLANTS FOR THE CITY.—In naming plants for city gardens, it will be necessary to notice the aspect, whether it be facing north or south, shady or fully exposed to the sun. Those who possess gardens facing the south, and where the sun can reach the soil a greater part of the day, may grow almost any species of plant that will succeed anywhere in this climate; but where the soil is partially shaded, plants suited to those conditions must be selected. There is an abundance of plants adapted to sun and shade, therefore a monopoly is out of the question in city gardening.

One of the principal causes of failure in city gardening is found in the injudicious selection of plants. Those who are in search of plants visit one or more of our floral establishments in the spring, and they see so many beautiful things that they do not know what kinds to purchase, but select those which happen to strike their fancy; leaving the question of adaptation to soil or location out of the question. A plant of English ivy is at home in a shady nook on the north side of a wall, but a verbena would soon perish by its side; and here we might introduce one of the great and unsolved problems of horticulture, (adaptation;) but enough has already been discovered to teach us that different plants require different exposures and treatment.

FRUITS FOR THE CITY GARDENS.—It is not to be supposed that those people who own but a city lot will expect to grow fruit sufficient for their own use; still something can be done in this line. Apples, pears, plums, and other large fruits naturally borne on large trees are not suitable for city yards; but when grown as dwarfs, or trained upon walls or on low trellises, there are few things more beautiful, or that will furnish more real pleasure to the possessor. Those who have never seen one of those dwarf trees, not exceeding two feet in height, loaded with large and luscious fruit, can scarcely imagine what a useful and beautiful thing can be grown in so small a space. A row of dwarf apples, even if not more than twenty feet long, when in full bloom, is a floral display not often excelled in the most costly conservatory; and while we are enjoying the beauty of the apple blossoms, we know that they are promises of future luxuries. The same is true in regard to many other of the larger fruits which the gardener's art has moulded into forms suited to the most circumscribed space. Thousands of these trees might be grown in the city of New-York, in the narrow borders to be seen in almost every garden. But if there is any one fruit which has given more general satisfaction than another, it is the grape; for high walls and trellises seem to be just suited to its wants and habits. Although thousands of grape-vines are now growing in every Northern city, there is room for ten times as many more. In every garden where the sun shines upon the ground for half of the day, grape-vines can be grown and be made to yield abundantly. It is not necessary, as many suppose, to have a wide, uncovered border for the roots, because, if the soil is made good and rich, and with a proper drainage, it may afterward be covered with brick or stone walks, leaving a space of a foot or two in diameter around the stem of the vine, and its roots will take care of themselves. Some of the most vigorous and healthy grape-vines to be found in New-York or Brooklyn are growing in yards the surface of which is almost entirely covered with brick and stone. We would not advise paving the earth about grape-vines; still, if no other place could be secured, we would prepare the soil over which a pavement was to be laid so that the roots of the vines could pass underneath it, if necessary. Grapes will usually ripen earlier and better in city yards, where they are protected from cold winds, than in the open country; but the great defect to be observed in vines grown in city gardens is in the pruning. The chief fault is that the vines are allowed to produce more fruit than they can bring to maturity. But we can not enter into the practical details of grape culture at this time, although every one who possesses a city yard on which the sun shines can produce as many grapes as a moderate-sized family can use during the autumn months.

ORNAMENTAL PLANTS.—A majority of those who live in a city will prefer to cultivate ornamental plants in preference to fruits. The first point to be observed is, whether the garden-plot is exposed to the sun or otherwise, because these conditions will determine what kinds of plants can be cultivated; but in either case, very large and coarse-growing species should be avoided if a succession of flowers of a really beautiful effect from

foliage is desired. We will suppose that the garden has a full exposure to the sun for at least one half of the day; in that case we will plant in the centre of a group, or at the north side of a square or oval bed, a few climbing plants, such as the Belgian honeysuckle, the Chinese or coral monthly, etc., or a climbing rose or two, each to be trained to the fence or to stakes. A few low-growing shrubs might follow, such as the Weigelia Rosea, Pyrus Japonica, Spirea Reevesii, Deutzia Gracilis, Daphne Cneorum, and a number of other similar growing plants to be found in almost every nursery. But there is another class of very desirable ornamental plants that has been almost universally neglected by our city people. I refer to the broad-leaved evergreens, such as rhododendrons, kalmias, and hollies. There is an almost endless variety of these that will thrive in our climate; the flowers of most of them possess great beauty; and the deep glossy green of the foliage during the whole year affords a striking and pleasing contrast with the bare walls and naked fences of a city yard. All kinds of plants are liable to be injured by dust that rises from the streets and settles upon their leaves, and there are none that will show its deleterious effects sooner than the broad-leaved evergreens; but a few minutes spent each day is sufficient to keep them perfectly clean, especially where a hose and plenty of water is near at hand, as it is in every large city in the Union. Low-growing herbaceous plants of various kinds can be intermingled with the shrubs or planted alone; a variety should be selected, so that a succession of flowers may be had during the whole season. The most desirable sorts will be found fully described in any of the late works on this subject. The great secret of success (if it can be called one) is cleanliness in the foliage of plants grown in cities. Prepare the soil so that the water will not remain so long about the roots as to become soured and filthy, and then keep the leaves clean, and there will be no trouble about growing plants in city yards.

Plants for Shady Situations.—There are many people who own city plots that are partially shaded, and they make this an excuse for not cultivating plants of any kind. But nature teaches a different lesson, for she has spread her carpet, composed of the most gaudy colors, beneath the tall trees of our forests where the direct rays of the sun never fall. Go where you will, beneath the perpetual verdure of a tropical forest or in the deep shade of our northern woods, and there you may find hundreds and thousands of plants that flourish in the shade. Nature has provided plants suitable for both sunlight and shadow, and we have only to make a selection of the most desirable kinds. Nearly all of the hardy species of holly, (ilex,) mahonia, dwarf yews, junipers, acubas, berberis, do well in a half-shady border. Then there are many species and varieties of trailing evergreen plants, such as ivy, creeping myrtle, gualtheria, Mitchella, Epigæ, or trailing arbutus; in fact, there is almost no end to the beautiful plants that may be successfully grown in a shady garden. The native ferns, as a class, are plants particularly adapted for such situations; and I do not know of any thing in the shade range of ornamental gardening that will afford more pleasure to the possessor or produce a more pleasing sight than a well-arranged bed of our hardy ferns. A heap of stones, with the interstices filled with a light, pliable soil, is just the position for these most graceful and elegant plants. They are to be had in abundance everywhere in the country, and they cost nothing but the digging up and bringing to the city. Some of our northern species grow six or seven feet high, and others not more than two or three inches; therefore there is no want of diversity in size or form of foliage.

Plants under Glass.—What we have said in regard to light and shade for plants in the open air is true of those grown under glass. There is an abundance of beautiful plants suitable to every position, likely to be met, either in city or country. Cultivating plants under glass can not be too highly recommended, particularly for cities, because in such situations they are always under control; heat and moisture can be given and withheld to suit each species and variety. Besides this, flowers can be produced under glass at whatever season they are most desired; and, as winter loses half its gloom and dreariness in their presence, we usually strive to have them abundant at that particular time. Our cities might become vast conservatories filled with the choicest products of the vegetable kingdom, if those who possess the means could be educated up to so high a standard as to appreciate the beautiful things which are so lavishly bestowed upon us by our Creator.

Landscape Gardening.

BY ROBERT MORRIS COPELAND.

THIS is the title of the least understood and worst named art which helps to refine and improve our social condition. I say social condition, because men who live entirely by themselves will, if they have any mental culture, find in the general landscape, and the beauties of mountain and forest, lane and hedge-row, enough to enjoy and admire without the aid of any art. As soon as we begin to live in communities, to acquire some surplus income, to find land growing costly, we try our best to increase the local attractions of our immediate surroundings, and to bring inside our own boundaries as much that is interesting and beautiful as we can. In former times wealth accumulated in but few hands; as riches increased a small competency soon swelled into wealth, and to secure the possession and enjoyment of wealth, when there were no mills, railroads, or bonds to give interest, men put their money into land and dwellings.

Land to be valuable must be improved, which gave rise to good farming and comfortable buildings. It was an easy and short step from *comfortable* to handsome buildings, and from improved farms and architecture, to improvements in the treatment of the surface of the earth, which gave birth to an art called by its originators Landscape Gardening.

Where this art took its rise the estates were large, and the artist was expected to deal with many miles of surface, and had in his control not only the surface on which to create his picture, but boundless money to work with. Consequently, when the workman was a master of his art, the landscape was actually moulded by him, and he could hope to, and did, cultivate the minds of his employers and the public by his works.

In process of time, money gathered in the purses of men not possessed of broad acres, who must content themselves with treating a small piece of ground elaborately, and trying to create on a small scale, by variety and detail, local beauty in place of broad landscape effects. Nature, ever ready to lend her aid to those who sue, with earnest deference helped the artist—with flowers, shrubs, and water—to produce miniature effects that were pleasing, and by lavish use of the minor materials great beauty has often been created.

But whilst all painters in oils are equally landscape artists, whether they cover ten feet or six square inches of canvas with their pictures, the men who have to deal with square miles or square feet of land are not equally entitled to be called Landscape Gardeners. It is true that in so far as half an acre is a part of the face of nature, so it is of the landscape, but in the original sense the title does not describe the work done on a small area.

The artist on the small scale should aspire to no more descriptive name than Ornamental Gardener, and should try to show by his familiarity with the decorative capacity of flowers and shrubs, and his wise use of them, that the art of ornamenting a small place is not less worthy than that of creating a landscape. In foreign countries, and

particularly England and France, decorative gardening has been carried to wonderful excellence, and the effects produced by decorative gardening, in form and color, are beyond description; they rival in variety and richness the efforts of artists who use pliable brushes, soft color, and smooth canvas. In order to be successful, however, in such gardening, the workman must have unlimited control and supply of the materials to be used. When we look at the little places which are made along the Hudson and in the suburbs of our great cities, and enjoy the knots of flowers and the groups of shrubs, the combinations of trees and vines, and the smooth surface of waters, the play of fountains, we can but congratulate their owners that they have the money to spend in improving the country in which they live.

But the best places in this country are so far behind what is often done in Europe that it seems as if we had done nothing.

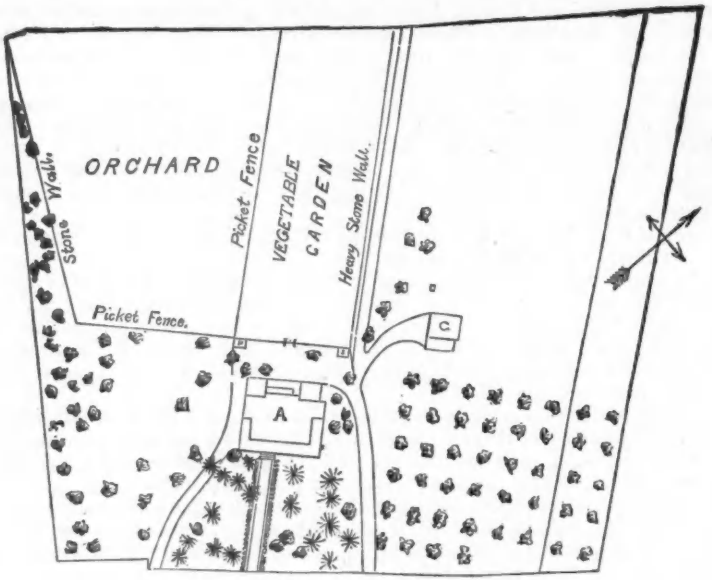
In the spring, the city markets and street stands are gay with stands of plants offered for sale, to be planted in the beds and yards of city and suburban houses; and as each year we see an increasing number, we wonder where all these plants will find purchasers. Every country place of moderate size will require, some dozens, and some even hundreds, to give the enrichment their owners deem sufficient; but dozens and hundreds are only the units used abroad.

One gardener in Scotland writes to a magazine that every fall he strikes 16,000 cuttings of zonal geraniums; that at different times during the autumn and winter he puts in "batches" of 6000 verbena cuttings. In the garden of the Ville de Paris, the gardener annually provides 500,000 Cannas as a part of his stock.

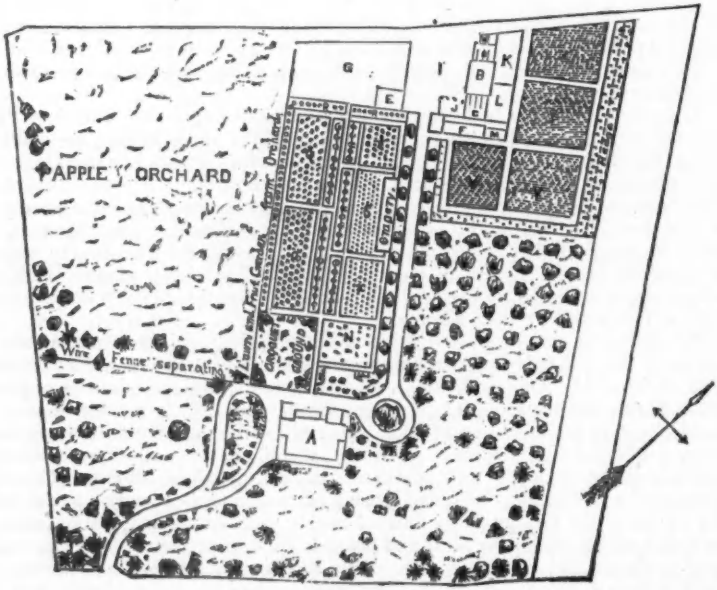
When we think of the miniature size and slow growth of such varieties as Pelargoniums, and Mrs. Pollock or Cloth of Gold, Light of Day, etc., and know that in the Victoria Park, Sydenham Palace, Kew, Battersea Park, and other English public grounds, there are many hundred feet of these plants in continuous rows and solid masses, it is easy to see that very large stocks must be provided. Our gardeners and horticulturists talk of bedding, of planting in masses, etc., repeating the words and cant phrases of English gardeners; but not one of them would venture to look the idea fairly in the face of real decorative gardening, where the beds should rival in color and variety the common effects to be seen in any English or French park. The reason for this is apparent; our gardeners are as competent as foreigners to grow the stock, and are eager to sell all they can grow, but the prices are too high to permit men of moderate means indulging their fancies.

Whether we buy our bedding plants or produce them, we are limited by the question of cost; even if a man has houses of his own, and his own gardener, he stumbles at the idea of growing thousands of these plants for his own grounds; he quickly reasons thus: these plants sell for $1.50 per dozen. I can not afford it. If I produce them, I will sell them, and use the money to pay expenses. If there were no particular beauty or benefit in their decorative effects, this economy would not be greatly to be regretted, as no one wants to see profusion simply for the sake of profusion. The beauty which may be produced by the lavish use of color and variety in flowers, whether bedding plants, perennials, or annuals are used, is so great that somewhere in this country there ought to be as fine a display as in Europe.

Nowhere can this be done with so much propriety as in our parks; nor shall we ever have the realized ideal of a park until we do make a strong and successful point of floral enrichment. Our parks are as yet only hybrids, mongrel mixtures of good ground-plans, florid architecture, bad planting, incongruous effects lacking that harmony in conception and subordination of parts which will make them enduring examples of good landscape gardening. The best of them please the careless multitude who only want a place to breathe, to play, to walk, and drive; but the thoughtful observer of natural effects, the man who can foresee the future growth of taste and appreciation in the community, who can carry the present parks forward twenty years in his imagination, must see that our parks are related to the ideal and possible park, in the same degree as what we call the gingerbread and carpenter architecture of twenty years ago, is to the best buildings which are now being erected in town and country by our professed and educated architects.



Sketch of Grounds before Alteration.



Sketch after Improvement.

Home Scenes.

BY B. S. OLMSTEAD, RYE, N. Y.

IN this paper, and in those which may follow, it is proposed to illustrate, by practical examples, some of the various principles which underlie all artistic improvement of grounds.

No one who has traveled through the suburban parts of the country with open eyes can have failed to experience the varying emotions excited by the home scenes of the people. It may have been a poor man's dwelling, and oftener a woman's, which, by its simple beauty of hanging vines, green grass, and cooling shade, has made it seem as though all the home virtues might nestle there and grow apace, and has tempted the wayfarer to stop and rest awhile. Then, perchance, it may have been the rich man's home, rich not only in money, but in skill and taste in using money, where Simplicity has met him with her smiling, innocent face, where Convenience has extended her ever-ready helping hand, where Variety has tempted and Intricacy lured to further research, where over all Unity has reigned supreme, and where he has felt that it would be a joy to wear out the remnant of his three-score years and ten.

And then, alas! has come a blot upon the scene—the home of the sloven, with its broken palings, its slatternly, shadeless yard, its pigs and geese, and trumpery and dirt, which has hurried him on to the next friendly turn in the road where the hateful thing would be hidden from his sight. And worse than this, a scene of wasted time and money lavishly spent in tasteless extravagance, puerile conceits, and discordant forms—of trees, which might have been a glory and a beauty, spoiled and spoiling, has made the passer-by to mourn that the means thus employed could not have purchased for its possessor enough appreciation of natural beauty to have left it unmarred.

By what subtle influence these emotions may have been excited he may not discern; but that his journeyings were pleasant or unsatisfactory by reason of them he surely knows. Nevertheless, these varied feelings spring from unfailing sources. Far down, underlying all improvement and arrangement of these home scenes, are certain unchanging principles which, when heeded and obeyed, never cease to give satisfaction, but, when disregarded, rebuke with like certainty.

Some of these governing principles, those which are most frequently violated, and which may be referred to in the illustrations which are to follow, it will be convenient to enunciate in this place.

I. SIMPLICITY.—An avoidance of all affectation, ostentation, or extravagance; and which leads, by easy transitions, from one scene to another, and so seems to be the governing principle of

II. VARIETY, which calls into use the many lovely forms of the vegetable world; creating by them light and shade, vistas and recesses, and leads, by winding walks, from scene to scene; in short, it employs judiciously all the various means to avoid satiety.

III. UTILITY, which includes convenience of arrangement, fitness, or the adaptation of the various parts to the purposes of use.

IV. SYMMETRY—a proper balance of parts, not necessarily uniformity.

V. ASSOCIATION.—This principle calls into exercise the affections or the veneration of him who is surrounded by the scenes it has helped to create. It brings to mind the remembrances of past years. The offspring of the tree which a revered father planted, or the flower which was the special object of a loving mother's care, endears to son or daughter their home, however distant, more than all else. This law has still a wider range. It pervades all history. A sapling from an acorn borne by Charter Oak in the grounds of him who in early youth was taught its story, a cedar of Lebanon by some parish church, or a clambering ivy on its walls, shows how this law reaches back through years and centuries to bring around our homes objects of love and veneration.

VI. APPROPRIATION.—This law brings within the reach of the improver, surrounding objects over which he has otherwise no control. By it a limited space may be apparently extended; a small domain, cramped and confined, freed from its restraint. Under its teaching, scenes nearer home are harmonized with distant views, and made a consistent

part of the whole landscape. It is a principle often difficult and sometimes impossible to apply; but in other cases it produces effects which are almost marvelous. Generally its results are satisfactory in proportion to the artistic skill of him who attempts its application.

VII. Recognition of Art, by which the beauty of the scene is traced to the hand of him who planned and perfected it. This principle includes order, neatness, and finish. It produces undulations with polished surfaces, gently melting into one another; gracefully flowing lines, and, when straight, those which are perfectly straight. Under its influence the various elements of natural beauty are imitated and adapted to the purposes of habitation, but the result is never to be mistaken for a piece of natural scenery.

VIII. Unity—the ruling spirit of all. It combines the several parts into one harmonious whole. The various parts may in themselves be beautiful, convenient, useful; but where this law of unity has its legitimate control, they are all blended into one complete work of one mind.

Some of the leading principles of landscape gardening have thus been briefly glanced at, and they are believed to be immutable. It is, indeed, not impossible that beautiful scenes and beautiful adornment may be created without a competent knowledge of them; but if these results are analyzed, it will be found that these laws have been unconsciously heeded. The untutored artist may by his early etchings surprise us, and, all unknown to himself, show an intuitive knowledge of the grand principles of the art he was born to illustrate and adorn. All this is granted and recognized. And another fact is also recognized—the fact of innumerable attempts and innumerable failures; where it would be hard, indeed, to find a trace of law or principle, except in its violation, and where such violation has been the cause of the failure. If the thousands who are now attempting, and now failing, to improve and adorn their homes, could know, and recognize, and obey these and kindred laws, a change would pass over the face of our country as wonderful as if the paintings on the walls of some of our galleries could be replaced by the works of the great masters.

Who shall teach them? Far be it from the writer to assume such a task. But if, in all their imperfection, these illustrations shall convince any one of these seekers after home beauty that there *are* great principles to help them in their efforts; if, in case one of them has gone so far as to call to his aid any of those who make it their life's work to investigate and comprehend in all their fullness these principles, he shall be persuaded not to permit the advice and plans of such a helper to be marred, and garbled, and destroyed by the ignorant prejudices and jealousies of some grower of beets and onions or possible layer of stone walls; if one place shall have been made more truly beautiful, one home more enjoyable, then the writer will feel that he has done one good work.

The plan which will now be considered will perhaps serve to show the change which may be wrought by the application of some of these principles.

The place referred to occupies one of the finest sites in the southern part of Westchester county. It commands fine views of Long Island Sound and the island beyond. The first sketch is a fair representation of the grounds as they are, or were, at the time the preliminary surveys were made. A thick planting of evergreens filled up the front portion of the grounds, through which a straight walk led from a small gate directly in front to the house, cutting this portion of the lawn into two parts. To make this division more marked, this walk was flanked on each side by parallel rows of box about eighteen inches high.

A half-decayed old apple orchard crowded upon the lawn on the north. On the south a stretch of lawn, covered with a promiscuous planting of young deciduous trees, extended to the southern boundary. Very few of these trees were so large but that they could be safely transplanted. Behind this, in the south-west corner of the place, was a thrifty orchard of apple-trees in fine bearing condition. Directly in the rear of the house was the vegetable garden, guarded on one hand by the privy, and on the other by a smoke-house. On the north of the garden was a heavy stone wall, along which was the road to a large farm-barn, not belonging to the present owner, and not represented on this plan. A carriage-house at C stood in close proximity to the house.

The approach-road extended from the southerly entrance gate to the steps at the south-east corner of the piazza, then around the house, by the kitchen-door, and so on to another gate north of the first entrance.

A "flutter of scene," producing a feeling of perplexity as to what it all meant, was the first impression felt; afterward, a conviction that, if any distinct expression or character had ever been aimed at, it had not been reached. It was a failure.

The dwelling is a fine old hipped-roof mansion, quite convenient in its arrangements. As no great change in *it* was desired or deemed necessary by the owner, it became requisite to conform to it, in its present condition, all changes attempted in the grounds. By reference to the plan for improvement, the changes recommended will be obvious. In the grounds as they were, an awkward jog in the ha-ha wall in the front broke the continuity of the line on that side. This has been corrected, and the consequent effect is that the apparent extent has been increased.

To secure more lawn directly in front of the parlor windows, the entrance gate has been placed at a point near the southern boundary. This position gave opportunity for a graceful sweep of the approach-road up to the front steps. At this point the approach connects with a carriage sweep, and with the road to the rear of the house and to the carriage-house. This arrangement enables visitors to come and go without passing by the kitchen-door, as in the old way. It affords, also, an approach to the rear for butcher, grocer, and ice wagons, and other vehicles of like useful but not always ornamental character; and if these would keep to the south of the palm-leaf-shaped grass-plot, they would intrude very little upon the pleasure-grounds. After depositing their loads, they can return by means of the circular sweep at the north-west corner of the house. This circle also serves another purpose. A carriage waiting at the front steps may be required to give place, for a moment, to another coming up behind. This it can do by proceeding to the rear, around the circle, and so back to its former position.

The old vegetable garden has been converted into a croquet-ground, a small shrubbery, a drying-ground, and a fruit-garden. On the northerly side of the latter is a cold grapery. The smoke-house has been taken away, and the privy removed from under the eye of every visitor to a spot made secluded by groups of flowering shrubs. The carriage-house has been placed in a more appropriate position, within convenient distance of the house, and where other needed offices can be grouped with it; and a new vegetable garden located in immediate proximity to its manure and compost heaps; whilst the ground on and near which it stood has been devoted to an orchard of standard pear-trees, sufficiently under the eye of the occupants of the house and of the gardener to keep hungry and covetous boys out of the way of temptation. A row of cherry-trees on each side of the drive to the carriage-house will afford a grateful shade on a hot day, and *perhaps* a rich treat of that luscious fruit in some propitious season. The poultry-house and yard have been located in the rear of the fruit-garden—a place well adapted to the purpose by reason of its warm exposure and convenient access, through the garden, for the ladies of the family. The walks leading to and in the fruit-garden, and the road to the carriage-house, are in straight lines; the latter, because there is no reason for a curve; and the former, because these lines are best adapted to the purposes of culture.

There was variety in the original planting of the grounds, but a variety by no means artistic. The changes were abrupt. There was no easy gradation from one scene to another. To correct this, many of the evergreens in front of the house have been removed and placed in positions where, whilst they give us the beauty of their presence, they serve as shelter from cold winds, as screens to those parts of the place which should be separated from the pleasure-grounds, and as helps to shut out the dust of the public road, and conceal the boundary on that side of the grounds. Others have been so placed as to cause the whole to blend harmoniously with the deciduous trees and shrubs. By this removal we open, also, a landscape of woods and pasture-lands, with the water in the distance. The straight walk, with its formal row of box, which cut up and frittered away the lawn where an unbroken expanse was most needed, and which would not have harmonized at all with the curving lines of the approach, was sadly out of place, and has been taken away.

The planting of deciduous trees on the south has been thrown into closer groups, or merged into the evergreens on the north. By this means vistas are opened through and along which the eye is led on to beautiful views of the Sound in this direction, and more decided masses of shade created. The ornamental planting has been extended into the easterly border of the apple-orchard to break the otherwise abrupt change from the irregular and natural planting in the pleasure-grounds to its straight and formal rows. The old orchard on the north has been entirely removed, to afford a wider extent of lawn and ornamental planting. It was the more easily spared, because the more thrifty orchard on the other side will give an ample supply of fruit.

In the plan which we have now considered, certain of those principles laid down in the former part of this paper have governed us.

Simplicity has been sought by avoiding all unnecessary walks, any abrupt changes, and by using the simple beauty of trees, shrubs, and grass for ornament.

Utility has held its sway in the arrangements for convenience, and in adapting the place to the purposes of use. The straight walks in both gardens, the carriage-sweeps, the drying-ground near the kitchen, the carriage-house and its offices, are instances of the application of this law.

Symmetry has wrought out a proper balance in the planting, so that about the same amount may be seen on either side of the house.

Recognition of art has caused the lines of the drives and walks, when in curves, to be easy and flowing, their sides parallel, and will be further obeyed in keeping their edges always true, the lawn smoothly shaven, and every department in perfect order.

Appropriation has preserved or opened the beautiful views of wood and water beyond; whilst the boundaries of the place have been concealed by planting, and by the use of ha-ha walls on the front and south, and the almost invisible wire fence between the lawn and orchard.

Variety has been attained in the different character of the planting; by its various bays and recesses, giving a new picture from almost every window; by the vistas leading out to the country beyond; by the glimpse into the croquet-ground, giving to every young visitor the promise of healthful enjoyment; and by the change of the curves of the approach-road to the straight lines of the drives to the carriage-house and garden-walks; and the ruling spirit of

Unity has been felt in the harmonizing influence of the circular sweep in the rear of the house, which has served to connect these two systems of lines without any abrupt transition. This law has also asserted itself by blending the various elements of the planting into one harmonious whole.

A Flower Sermon.

ONE of the most delightful little incidents in floral history is recorded thus: There is in Oldgate, London, a rector who has for years past preached an annual flower sermon to the school children of his own and the surrounding districts, for the purpose of inculcating in them a love of those floral beauties that speak as much of the existence of a Creator as any thing else on earth. The example set him also influenced another rector, and one evening his entire Sunday-school, to the number of over seven hundred children, each provided with a bouquet of flowers, sallied forth, headed by their pastor and several other ministers, for a walk through the parish to the church. A sermon was preached from the following text:

"I will be as the dew unto Israel: he shall grow as the lily, and cast forth his roots as Lebanon. His branches shall spread, and his beauty shall be as the olive-tree, and his smell as Lebanon."—Hosea 14: 5, 6.

The whole of the children sat in the body of the church, which was tastefully hung with garlands of choice flowers, while the adults occupied the galleries. Nothing could have looked more beautiful than the aspect of the congregation, who, though mostly of the poorer classes, carried individually at least one flower, if not a large bouquet, and spread throughout the building a delicious perfume such as no artificial productions could compare with. From the humble dairy to the choice exotic, each had its representative. The occasion was one of long and delightful remembrance. How much more enjoyable such occasions are than the generality of public amusements!

Calendar of Garden Operations for March.

Having decided to make a hot-bed, where it shall be, its size, your heating materials, soil for the bed, and every thing in readiness, if the weather has the appearance of soon becoming settled for spring, it will do to lay the bed up, put on the sash, and let it commence to heat. After the heat reaches its height, place evenly over the surface six to eight inches of the soil, previously prepared of loam and well-rotted manure; you can then sow seeds of the earliest desirable vegetables. The occasion of failure with the hot-bed often results from too much haste in sowing or improper care after the plants come up. Seed should never be sown in the hot-bed till the heat begins to subside, as the heat and steam, when at the highest, destroy the life of the seed. It is only desirable to start a few of the earliest vegetables, this month. April is soon enough for most kinds of vegetables and plants, in this latitude, for the general cultivator; market-gardeners will commence in February.

Look now to the cabbage, cauliflower, lettuce, etc.; wintered in the cold frames and beds, and if in good condition, and promise plants in plenty, they should be pricked out into other beds to harden, ready to transplant into the open air in April. If there is likely to be a deficiency of plants, plant at once, and keep the beds in constant heat, with little ventilation, till the young plants are well started, after which give air cautiously.

Do you desire an early mess of asparagus? Take a sash and put over a small portion of the bed, having inclosed it with a frame, and worked in a good dressing of well-fined manure carefully, not to injure the crowns of the plants; and by suitable attention to watering, ventilating, etc., you may reasonably expect good asparagus some weeks in advance of open-air culture. Beds not thus forced should have their covering of manure forked in with a light dressing of salt or brine over the surface. Seed may be sown in drills, where it is desirable to grow new plants, or new beds may be set with good strong plants. Read the article on "Asparagus" in the January number.

Seeds of tomato and pepper may be sown during the month, to furnish plants to be transplanted into the open garden in May. Plant the best seed from the earliest ripened, well-developed fruit of last year, of your own raising, or, if your neighbor grew earlier and better, buy of him.

There is little use in planting beans, squash, cucumbers, melons, and like seeds, to force, as they are tropical fruits and require settled warm weather before they will grow or do any thing in open culture. It is better to wait another month at least, and then start them on small square pieces of sod in the hot-bed.

The advantages of a hot-bed, in starting early tomatoes, peppers, cabbage, etc., can be had on a small scale with little of the trouble attending the hot-bed, by using boxes about six inches deep, filling with rich loam and well-decayed manure, and setting in a window of a warm room, where they will receive the sun a portion of the day, and planting the seed therein and watering as occasion requires, to prevent drying out. The plants are hardened off by carrying the boxes out-doors on pleasant days.

A few peas may be planted in rich, warm soil, as soon as the ground can be worked. Open the drills, and put in good well-decayed manure, or other fertilizer, and plant the seed over it, after covering with a light covering of soil;

cover the seed three or four inches deep, and lay some pea-brush over the rows, with the tops to the south to prevent radiation, etc.

Early potatoes may be planted as soon as the ground can be well fitted. For so early planting it is better to use whole tubers, well matured and developed, of medium or large size. The question of sets or sprouts for planting, in preference to whole tubers, is one that has occupied a large portion of attention from horticulturists and others, the discussion of which we wish here not to enter into. In warm weather, when plants can grow right along, there is less danger of a set or sprout rotting and dying than earlier, when we have wet and cold, often attended with frost, etc. At such time the whole tuber is better able to withstand and recover from the rigors of the season. The best varieties are much the subject of local circumstances, soil, climate, etc., no *one* being the *best* under allcircumstances and in all locations. Regard in selecting must be had to taste, market demands, etc.

The manure and compost heap for farm or garden use should be forked over, to encourage decomposition. Every thing that will conduce to increase plant-food should be added to the compost. Decaying vegetables from the cellar, slops, and even greasy dish-water will add materially. Save and collect all the bones of animals, and break them in pieces ; take a tub or cask, and fill in one or two inches of good wood-ashes, and pack your bones on this,filling in ashes sufficient to fill all vacancies, closing off with three or four inches on top, and on this empty the slop-pail. Kept wet with urine, the bones will in a few months break in pieces by shoveling over, and then you have a better fertilizer than any superphosphate the market affords, and at only a tithe of the cost. All manures are better kept under cover till needed for use, when they should be immediately covered or mixed with the soil, after being carted out.

Such vegetables as parsnips, salsify, etc., which were left in the ground over winter, will now be in their prime, and should be dug, packed away in sand in the bottom of a cool dry cellar, to be used as required.

A great fault of the rural population in growing garden vegetables is that they do not grow them in the variety they ought for their own health and greatest profit. They are too prone to follow in the steps of their ancestors, planting a few potatoes, beets, pole-beans, cucumbers, and a row of marrow-fat peas. As their fathers did before them, so do they; planting few varieties and not giving the garden the attention its profit requires. Now, there is a great variety of good and wholesome vegetables and products that may be grown in a temperate climate, in a well-ordered garden, that would redound to the interest and profit of all who can so well afford the space as all farmers can— some of which we hope at the proper season and during the year to call your attention to and interest you in, with hints for their culture, etc. The different varieties of the cabbage tribe, artichokes, mushrooms, plants for salads, etc., will come under our notice.

Hardy vegetables to be used for producing seed, like the cabbage, carrot, celery, turnip, onions, etc., may be set out as soon as the ground can be worked, hauling the soil well over the crowns to protect from hard frosts. Euthusiasts in gardening should avoid the frequent error of supposing that summer has come if two or three pleasant days occur, and commence out-door operations before the soil is sufficiently dry or warm. Working the soil while wet frequently injures it, not only for the present crop, but for years after.

A few good garden-tools, such as hoes, shovel, spade, watering-pot, line and reel, markers, etc., are desirable for garden use, and should be in readiness for out-door operations. Old ones should be repaired, the wood painted, etc., and new ones, if needed, be purchased at the first opportunity. Purchase light and durable best steel tools, even if they do cost a few cents more at first; the extra cost is more than made up in ease of use; and after you get good tools, remember they are only kept so by *good care.*

FRUIT-GARDEN. — New plantings may be made here as soon as the ground settles. In the mean time, order and select new stock needed, and make all due preparations. Remember that a deep, rich, and well-drained soil is essential to success in growing good fruit.

In blackberries we have several varieties claiming our attention, such as the Dorchester, Kittatinny, New-Rochelle, Wilson, and several others. Which is the best depends more upon the soil, location, climate, and the care that is accorded to them than the variety itself. Planting now, give plenty of room, by setting the plants six feet apart each way. Old canes should be cut back to about six inches.

In planting fruit-trees in the garden, they should be mainly dwarfs, as they occupy less room than standards. For pears, plant Bartlett, Duchesse d'Angoulême, and Vicar of Winkfield. These would be our first choice.

Prepare ground for strawberries, if new beds are to be planted this spring. Spade in a good coat of manure, and work the ground at least two spits deep. Transplanting is done after the plants have started a little.

Cuttings made from currants and gooseberries in the fall may be planted in well-prepared beds, if not done last fall. Fall planting prepares the cuttings to grow right away in spring, and thus get nearly a season's growth ahead of those planted in spring. Few if any of the foreign gooseberries are sufficiently hardy to withstand our climate and perfect good fruit. The hardiest are the American seedlings. The healthiest and most hardy currants are the old Dutch, although several of the newer varieties give us larger and more pleasant flavored fruit; but to get *good* fruit in quantities from any variety requires good culture and constant care.

Cuttings and rooted plants of grapes may be planted out as soon as the ground is ready to receive them. Plant Delawares and other short-jointed slow-growing varieties, in rich soil; other free-growing varieties in soil less rich. Concord, Hartford Prolific, and Delaware are found generally most hardy, well-disseminated varieties, bearing ordinary treatment remarkably well. Several of the newer varieties are deserving of a place in all collections. Wherever the Catawba and Isabella will succeed and ripen their fruit, they will furnish that which is more desirable than almost any of the new grapes. It is not best to remove protection from strawberries, raspberries, and other protected plants, till after freezing and thawing are over for the season.

Orchard and Nursery.—If spring pruning is to be done, let it be done as soon as the wood is free of frost, before other work presses. As you prune, be on the lookout for the eggs of the tent-caterpillar and other insects. Cut off and burn the twigs holding them. Eggs of various insect enemies will be found glued to the twigs and forks of the young growth. Look carefully after the cankerworm-moth, and destroy them; they will try to ascend the trees to deposit their eggs as soon as the ground thaws so as to permit their egress. Washing the trunks and branches of fruit-trees with soap and water, or strong lye, will destroy many insects and invigorate the trees.

Prepare all the necessary tools, scions, grafting-wax, etc., ready for grafting, as soon as the season will permit. Stoned fruit-cherries, plums, etc., should be done first; apples and pears later.

Fork over the manure and compost heaps, and increase the deposit by adding decomposable matter. It will all be needed soon for dressing over the roots of trees and in preparing new grounds.

In taking up trees for replanting, be careful to preserve as many of the fibrous roots as possible, and not to wound or injure the main ones. Any bruised ones should be pruned off smooth, cutting from the under side, slanting outward.

In making new plantings, prepare the ground by deep plowing, subsoiling, underdraining, unless well drained naturally, and enriching the soil with good compost, vegetable, animal, and mineral manure. Make holes for setting the trees sufficiently large to spread the roots out straight in, and extend eight or ten inches larger all around and four to six inches deeper than needed for the roots; fill in the bottom with good rich soil or sods chopped fine; set the tree spreading the roots well, and work in around and under the roots rich fine soil with the hands, and after covering the roots, firm with the foot. Set the young trees so that the top-side roots will be covered three or four inches deep; and if a mulch of chip-dirt or coarse manure is spread over, as far around as the roots extend, it will prevent drying out.

Grape and other like seeds to be planted should be brought into a warm room, mixed with sand, and kept moist in a warm atmosphere for a few weeks before planting out. They come up much more readily thus treated than if planted without this preparation.

Trees budded last season should have the stock cut back to about three inches of the bud.

Root-grafted stock made during the winter may be planted out in the nursery as soon as the ground is in condition to plant; always bearing in mind, it is better to drive your work than to have that drive you.

Lawn and Flower-Garden.—The work here is dependent upon the season and the amount of fall work done preparatory. The thoughtful gardener will always find something that may be done to advantage in keeping things in order, and to forward the work of a more busy season, such as clearing up, repairing old and making new walks, preparing stakes, trellises, etc.

On the lawn, there will be the fallen leaves, dry sticks, and branches blown down during the winter, to be cleared off; trees and shrubs to clear of dry, dead, or broken branches; bare spots to be dressed with compost well raked in, and reseeded with mixed lawn grass-seed. Top-dress with some suitable fertilizer—old rotten manure, compost, or guano is good, and roll well with a heavy roller. If small depressions in the surface occur, fill them up with rich soil. A lawn thus treated is kept even and smooth, and is better than if broken up to be smoothed and reseeded.

New hedges of thorn, privet, buckthorn, barberry, etc., may be set when the ground comes in order, and old ones cleared out of dead wood and leaves, and vacancies filled out.

Plant out and thin hardy shrubs, giving them a dressing of manure. Box-edgings should be reset before it becomes unsightly from killing out or unevenness, etc.; vacancies filled with new plants; grass-edgings may be laid new, and old ones trimmed and repaired.

The beds containing daisies, ranunculuses, anemones, etc., should be opened when safe; and, where desirable, sash may be put on and a growth started, to be soon followed with bloom.

Hand-glasses are very convenient for the purpose of starting early spring blooming-plants, such as snowdrops, crocuses, violets, polyanthus, etc.

Plowing among Grape-Vines.—Novices sometimes think they can plow the ground between their vines, especially if it has been neglected. This of course is sheer folly; the best plan is to use a cultivator with short teeth, not over four inches long, and go through and through. This will do the work thoroughly, and if the ground is well drained, this with good cultivation will insure good health to the vines.

EARLY TOMATOES.—Plant seed in a hot-bed now. As soon as the plants have developed their second leaves, up with them, and plant in another part of the bed, four inches apart and one inch deeper than they grew before. In a couple of weeks the plants will begin to grow vigorously, and the leaves touch; then transplant to a cold frame, one inch deeper again. Do not be in a hurry to get them out into the garden. When you meet men on the ferry-boat going home to their country places with a parcel of lanky tomato-plants from the city seed-stores, observe the date, then wait a full fortnight before your plants are put out. Waiting for a rainy day is not necessary, for the plants will come up with balls and a mass of roots that will astonish you, and may be transplanted without a leaf wilting. By following this mode we always beat our neighbors a fortnight.

YELLOWS IN PEACH-TREES.—While Western horticulturists are attributing the yellows to various different causes, we would state that at the Fruit-Growers' Club, New-York, lately, the idea was advanced that the sole cause lay in the frequent changes of temperature, or *chilling*. Several specimens of the wood from different trees were shown. Those from the healthy tree were perfectly uniform and clear throughout, while that from the tree having the yellows showed the interior wood of a very dark color, evidently diseased, the outer circle or ring still being healthy. Peach-trees are well known to be very sensitive to changes of temperature. Is it not reasonable to suppose that, where a tree is obliged to suffer frequently from "chills," the interior of the tree and its sap are affected and disease engendered? How is it, horticulturists?

MONTHLIES VS. WEEKLIES.

QUITE a number of our friends and neighbors of the weekly agricultural press are indulging in some queer "type-setting," like the following: "Please notice that this is a weekly of fifty-two issues a year, and not a monthly of only twelve issues for the same price."

We have no criticism to offer as to their choice of any fair inducement to gain new-comers to their subscription-lists, but it is not quite right to convey the idea that, because a journal comes four times as often as another, it is four times as valuable; nor by inference that a monthly is not worth taking at all. It so happens that, in nearly every department of literature, both agricultural and polite literature, the monthlies have much the largest circulation and most powerful influence. What literary weekly of sound, solid character has as large a circulation as *The Atlantic Monthly?* What weekly journal of popular illustrated literature, of travels, history, and romance, has as large a circulation as *Harper's Monthly?* What agricultural journal, of any character, excels the *American Agriculturist* in circulation? What journal that makes Horticulture its sole object is more highly esteemed than THE HORTICULTURIST?

Let any of these bombastic fellows that offer the above specimen of argument go into any standard library throughout the country, and ask for a file of any prominent agricultural weekly, and he is respectfully informed that they are not considered worth keeping. Let him inquire in the Astor and other libraries, in New-York, and he is informed that only monthlies are kept for record.

The truth is, that the monthlies are the standard preservers of history. A weekly newspaper, from its very nature containing a vast mass of matter intended to please and instruct for the passing week only, and to be replaced by another in a few days, does not possess a value which is to last for ten or twenty years hence, save to a very small class of persons.

But a monthly is constantly making a historical record, to be often referred to for years and years yet to come. If well conducted, its contents are esteemed the choicest of its kind, and its character is respected with high dignity. Its numbers and volumes are bound, and find an appreciative resting-place on the shelves of public or private libraries, and every line of type will be scanned by scores of different eyes as long as libraries and history may last.

This very day a full set of the volumes of the *Atlantic*, *Harper's*, or THE HORTICULTURIST will command more money, either at an auction sale or from private hands, than a full set of any two agricultural journals that may be named in this country.

Friends of the press, after this make no distinctions between the twelve issues and the fifty-two issues a year! A farmer, for his two or three dollars, may seem to get the most for his money by taking the latter; but at the end of the year the former has a choice character in his eyes which the latter rarely or never possesses.

BUILDING FIRES IN ORCHARDS.

THE peculiarities of our climate in late years, causing our orchards to be visited with late frosts about the time of blossoming, have suggested the inquiry in the minds of many whether a favorable change in the temperature of the air around the trees can be induced by the building of fires. This practice has been carried out in various instances by large fruit-growers with eminent success, and yet only very few have tried it. It is an operation requiring considerable discretion, and in order to be effective must be quite thorough. A large peach-grower in Illinois, while a strong northerly wind was blowing, and with such sudden change of temperature as to endanger all his trees, built large fires of some smoky material on the windward side of his orchard. The smoke, which was dense and abundant, drifted down among the branches of the

trees, moderating the cold, and at the end of two days, during which time the "norther" raged with great force, his orchard came out unharmed. Some years ago, an incident like the following occurred. A severe frost occurred, one year, on the 4th of June, killing the wheat, corn, and fruit over a large extent of our Western country. On that night, in an orchard, a cow happened to be lying under a large apple-tree. The fruit on that tree was saved, while on all the others in the orchard it was killed. The warmth from the cow's body and breath, rising into the tree and spreading among the leaves and branches, kept the temperature elevated above the freezing-point. We give this incident publicity, although unable to verify or locate it. It hardly seems probable that the small degree of warmth from the cow was sufficient to save the tree, yet there may have been especially favorable circumstances not otherwise mentioned. We have no doubt that fires in orchards, built of some very smoky material, and blown by the wind into the whole orchard, can be used judiciously and with good benefit. If, however, we were desirous of planting a peach orchard to obviate all such necessity, we would take particular pains to put it on the south side of a grove, or if on the prairie, plant a grove just north and west of it.

Hints on Small Fruits.

A CORRESPONDENT of the Fruit-Growers' Club, N. Y., lately asked the following questions, and the answer by Mr. A. S. Fuller deserves a wide publicity, for it is a kind of information now greatly desired by cultivators: 1. Will it do to continue pinching back the young shoots all through the growing season until frost, or should we stop in the fall? If so, at what time? 2. How long will blackberry and raspberry plantations last? I understand that some growers recommend taking up the old plants every four or five years and setting out new plants in their place. I hear that the Antwerp raspberry is failing at Milton, on the Hudson River. 3. I have seen it recommended to plow or furrow up to the plants in the fall. Now, should the soil be left there during the next summer, or be taken away?

REPLY BY A. S. FULLER.

1. It is difficult to give directions that will suit all localities and soils in regard to pinching back the young canes of raspberries and blackberries. My practice is to pinch back blackberries but once or twice in the season, according to the strength of the plants, and then only the main cane is checked, as I prefer to let the side shoots grow their full length, and prune them back in winter or early in the spring. I usually commence pinching off the main cane in July, and if the upper buds start and grow too strong, I check them again in August, but never later than the first of September. Late summer pruning or pinching is always injurious, particularly if the plants are growing very vigorously, because they are very likely to produce new shoots which will be killed by the frost. Besides this, the fruit-buds which are relied upon for the next season's crop will sometimes start in the fall, and of course be destroyed by the first frost. I have never found it necessary to check the growth of raspberry plants in summer, and I doubt if it is ever beneficial. 2. The duration of raspberry and blackberry plantations will depend entirely upon the soil and care given them. Probably five years is about the average duration, but I have known some to be as good at fifteen as they were at three or four years. 3. Plowing the soil up to the plants in the fall is certainly to be recommended for both raspberries and blackberries, but the soil should be made level again in spring.

MYRTLE-LEAVED ORANGE.—This is a plant seldom seen in our green-houses, but should be in our collection of plants grown for winter flowering. It is easily propagated by budding at the proper season on seedling stocks, planted in the open ground. Under such conditions, success is nearly as certain as with the peach.

In two years from the bud this orange forms nice compact plants and flowers profusely. The small intensely green leaves contrast so finely with its pure and fragrant flowers, that each little sprig is a bouquet in itself. Other varieties of orange have leaves too large, which are often of a sickly green. In the cultivation of the orange, our practice is to turn the plants out of pots into the open ground every second season. If this practice is pursued every year, the plants grow too strongly to flower well. So they are kept in pots alternately and plunged to the rims in the open border. The fruit is small, and of no value except for ornament.

MARESCHAL NIEL ROSE SAID TO BE HARDY.—The *Canada Farmer* mentions the fact that this new and splendid rose has been exposed to a temperature of eighteen degrees below zero without injury. In the ground of a friend living in New-Jersey, two buds of this rose, inserted in a shoot of one of the strong growing climbing varieties, passed through the winter of 1867 unscathed, and have this season made a combined growth of over forty feet. We have some doubts of the general hardiness of this variety in all soils and situations. Can any of our readers give us more information?

CRYSTALLIZING FLOWERS.—This is done by suspending or repeatedly dipping them in water saturated with alum. Dried specimens can only be used by this process. The freshness and beauty of flowers can be preserved by dipping them in glycerine.

SEEDLING MORELLO CHERRY.—The difficulty with which cherries, outside of the Morellos, have been grown on the prairie soils of the West, has induced attention to growing seedlings adapted to the soil and climate. One of the most extensive growers of seedlings, D. B. Wier, Esq., Lacon, Illinois, writes that he has over four thousand seedlings, from Early Richmond, Governor Wood, English Morello, etc., some of which have and some have not fruited. Among those that have fruited, one, a seedling from the Black Morello, gives promise of value, and should it sustain its promise, in future years will be named and disseminated. At present it is not offered for sale or to give away. Mr. Wier describes the "tree as more thrifty and upright than its parent; leaves finely serrate, long and narrow; fruit, same size and color as the English Morello, but not quite so much elongated or heart-shaped; stem, long and slender; ripens with English Morello."

GROWING GRAPES.—It is a noticeable fact that those persons who have large, well-kept gardens, in favorable climates, and who are in the habit of having their work well done, rarely, if ever, fail to have certain and abundant crops of grapes, if they have vines set out. This is owing, in a great measure, to the way in which the vines are treated, and also to the high state of cultivation in which these gardens are kept, rendering failure next to impossible.

No one will meet with a total failure in growing a crop of grapes if he will bestow suitable labor and care on the vines. The vines should be carefully selected in the first place, then they should be set out in ground prepared expressly for the purpose. After this is done, if they are trained to run on trellises, and pruned on the renewal system, a good crop can be expected. But it is too often the case that, in garden culture, the vines are left to themselves, receiving no attention or pruning; the consequence of such neglect is, that as they are allowed to spread more and more each succeeding year, running over fences, and twining themselves around the trunks of adjacent trees, the fruit becomes smaller in size, diminishes in quality, and becomes eventually of little value; yet, with necessary attention, grape-vines will always thrive and produce fruit, unless the season be unfavorable, or they are affected with disease of some kind.—*Rural American.*

TAKE CARE OF YOUR FRUIT-TREES.—*F. K. Phenix* warns fruit-growers against carelessness and neglect in planting their trees, saying: "Friends, if you want trees to thrive, plant on dry, deeply plowed ground. Keep roots from sun, air, frost, burying in ground again as soon as possible. If shriveled, bury tops and all in moist ground for ten days. Thin out and shorten in tops before planting, to balance the loss of roots in digging. Dig large holes, three feet across and two deep; or, better still, plow out very deep furrows, filling up with the best soil, so that trees shall stand only as deep as in the nursery. Straighten out all roots in natural order; fill in with best, fine, moist earth, and then tread down thoroughly; watering, if dry, before filling up. Then mulch, that is, cover the earth two feet each way from stems with coarse manure or straw, two inches deep. Always put corn, or some hoed crop, and never grass or grain, among young trees. All trees and plants in grassy yards, and dwarf trees also, must have special care. Wash the bodies of apple-trees in spring with strong soap suds. Kill off the caterpillars and leaf-rollers. Let fruit-trees head low—within three or four feet of, and ever-greens from, the ground. Let every body plant trees, and take care of them!"

WHAT BIRDS CAN DO.—An elm-tree, twelve years old, in one season ripens 164,500 seeds, all which in twelve years more would become as large trees as their parent, showing that a succession of 26,960,000,000 of trees might come from one; so of every tree; then any tree in time would cover, monopolize, the globe! But insects check the trees, and birds the insects. There are 1000 kinds of butterflies and moths in Massachusetts, and more than 4000 kinds in the United States; and 1000 pairs of moths will produce 300,000 caterpillars the first year, 45,000,000 the second, and 6,750,000,000 the third! But one bird will destroy (or prevent the existence of) 1,000,000 of caterpillars in a season; a pair of birds, 2,000,000; and the three, four, or five *young* birds, 3,000,000 more—making 5,000,000 of caterpillars which one family of birds will destroy or forestall in a year! What *infinite* fatuity to think of raising fruit without all the birds!

GRAPES are bought by the California wine-maker and delivered at his press, clean, for seventy cents per one hundred pounds; and it is stated that in one thousand pounds scarcely one pound of unripe or rotted berries has to be cut out from the bunches.

TRANSFERRING PLANTS.—The editor of *The Germantown Telegraph* says: There is no mode that we ever tried so effectual in transplanting tomato, cabbage, cantaloupe, or any other tender plants from the hot-bed, or from one place to another, as to prepare a vessel filled with manure-water and rich soil, about the consistency of thin mush, with which the roots of the plants should be well-coated and set in a hole made with a sharp round piece of wood or dibble. After being rather firmly planted, moisten again with manure-water. We have never failed in any transplanting when done in this way, and the trouble is very slight.

Sowing Asparagus Seed.

Where it can be done, and the cultivator can have the patience to wait for a proper length of time, it is always best to grow asparagus from seed.

The ground should be well plowed to the depth of from 12 to 15 inches, and made as rich as possible.

Sow the seed in drills one foot apart, and the following year thin out to one foot in the rows. This method will be certain of producing a good, permanent bed, and in three years it will have full vigor.

Those who prefer to set out from roots will do well to choose those only one year old, never older. Let them be about one foot apart each way, and the crown of the roots from 4 to 6 inches below the surface.

During the winter they should have a fine dressing of manure, and in the spring it should be forked in, all clods removed, and the top-soil nicely pulverized with a rake. A dressing of coarse salt—fish-salt will answer—should be applied about the first of April. The ground should be well covered with the salt, but care must be taken that it does not come in contact with box-edging plants and small trees, as it is fatal to them.

Spurious Early Rose Potatoes.—Facts have come to light showing that impostors are palming off on the public spurious specimens of this famous potato. The circumstances are these. Last spring, a firm of potato-dealers, in Boston, purchased a car-load of potatoes from Vermont, and in the mass there appeared a quantity of similar shape and color as the Early Rose. Instead of disposing of them in the usual way as table potatoes, they put them on the market as seed-potatoes of the Early Rose. In the vicinity of Boston many were sold and planted; but not until last fall was the fraud discovered. The potato proved to be *very late*, and so long in maturing that even the October frosts found the tops green, while the Early Rose potatoes were ripe and the tops dead in July. Buyers need no further caution to purchase from responsible parties.

Currants.—An idea seems to prevail among cultivators that the currant will thrive in any soil, in any position, and with any cultivation. Our experience satisfies us well that the currant will *not* grow upon any or all of the above hypotheses.

The soil best adapted for the successful cultivation of the currant *must* be deep, rich, and somewhat heavy, but *always* moist. We have never yet succeeded in growing them successfully on light loam or a sandy soil; they will *not* bear excessive heat. It is possible that in warm climates they may be grown for a year or two by the aid of mulching or planting in a cool situation or on the shady side of the fence, but we feel sure that after the third year the cultivator will find little comfort or produce sufficient to warrant their occupying necessary room. In New-England, where the currant succeeds to perfection in almost any spot where it may be placed, the idea of soil would seem somewhat trifling to discuss, but out of New-England, both soil and climate must be considered. It is useless to attempt growing currants on a light soil, with a climate where very hot suns are constant.

The currant-bush of itself does not generally require any supports; yet we have seen it recommended, and we think the plan is a good one, to stretch a single wire along the rows; this will allow of spreading out the plants fan-form; and when spread out in this shape, the sun and air are more readily admitted, and the fruit will reach much greater perfection.

Plant Trees.—When the editor penned his paragraph for the January number, blessing the man who planted trees for his posterity, he did not know how pleasantly and successfully this had been done by one old veteran on the plains of Iowa. *The Prairie Farmer* says:

"Three miles from Tipton, Iowa, there is a prairie farm owned by 'Uncle Josh.' When he first settled there, there was not a tree growing upon the tract. Nine years ago he devoted—some said sacrificed—eight acres around his farm to young evergreens, such as balsam fir, Norway spruce, arbor vitæ, Scotch and American pine. These were set so as to leave winding walks and drives, and liberal open spaces were left for strawberries, small vineyards, and flowers. The trees are now well developed, branching low, and running up, in pyramidal form, fifteen to twenty feet in height. There are almost one thousand of them, standing as sentinels around 'Uncle Josh,' protecting him from the winter winds and the scorching suns of summer. The birds nestle in them in spring time, and the soft zephyrs of eventide, after the toil and heat of summer days, will breathe their music into his soul, and lighten his toils, and gladden his days, and they will sing their requiems over his grave, and make his name immortal.

"I was told that these evergreens, thus adorning the prairie and making glad the hearts of all beholders, had raised the value of surrounding farms from five to ten dollars per acre."

Manuring Trees.—A safe guide is to watch the trees themselves. If they grow vigorously, with shoots of over two feet in length, with no care, then they need little attention; but if only a foot or less, the owner may settle his mind that he must apply both manure and cultivation to save his trees. If the trees grow annually from one to two feet or more, they are doing well.

A RURAL CURIOSITY.—At New-Brunswick, N. J., on the north side of the river, and immediately adjoining the railroad bridge, is a very fine country-seat, showing off a magnificent house, with an open, spacious lawn around it. Travelers passing up and down in the cars have noticed that the entire place, containing, say, twenty acres, is surrounded by a very neat rustic fence of untrimmed, unbarked cedar-wood, and built in panels of six feet in length and four feet in height, presenting a very singular but unique appearance. Yet few have noticed that in the entire length of this fence, containing several thousand panels, not one is like another. Every panel is different from all others, either in the size, or shape, or arrangement of the wood. Some of the sticks are long, and those adjoining of all sizes, down to six inches. Others are crooked, some are arranged in squares, some in rectangles of all shapes, others in diamonds and triangles or squares, or lines parallel, perpendicular, and horizontal, crossing from side to side, and up and down, in every conceivable position.

The number of variations is marvelous; and the mind which was able to conceive so many designs and arrange them in so agreeable a form must possess superior taste. It is, to our mind, one of the great curiosities of the day in rural embellishment.

Pleasure-lovers will do well to take a look at it as they ride by.

L. L. FAIRCHILD, writing to *The Western Farmer*, concerning a visit to some of the best dairy regions in New-York State, makes some statements which lead one to think whether American farmers are progressing in rural taste or not. He says:

"Three years ago, on a visit to Northern New-York, in the rich dairy region, I was struck by the general dearth of rural improvement. Neither the villages nor the country presented that inviting and cultivated aspect that greets the traveler in many portions of the West. Comparatively speaking, little had been done, in proportion to the time the country had been settled, in the way of setting out shade trees along the lines of public highways, or in the tasteful adorning of yards with shrubs and flowers. Many yards, belonging to well-to-do farmers, were bare of shrubbery, and were put to the practical use of "baiting" the team or pasturing a pet calf or lamb. The vegetable garden received better attention, but it was mostly in the good old way. The newer varieties of vegetables had found their way into but few gardens. The old system of raised beds was still in vogue. The fruit-garden was still more neglected. Strawberries, raspberries, blackberries, grapes, crab-apples, and so forth, were almost wholly neglected. People seemed to be giving much more attention to fine carriages, silver-plated harness, the latest cut of coat, and the newest style of bonnets, than they did to the outward adornment of their homes. You would see some large, fine houses with scarcely a tree, shrub, or flower to yield refreshing shade or gratify the love of the beautiful. A bare house without trees, shrubbery, and flowers is not a pleasant sight. It is the surroundings that add to it a charm and give to it the attractiveness which we all admire. The little cottage with its vine-intwined bower and beautiful flowers delights our senses far more than the cold and stately mansion, destitute of the surroundings that make the cottage attractive.

"The people of the West seem less the votaries of fashion and greater lovers of the beautiful in nature, and surround their homes with an attractive display, furnished by the growth of trees, shrubs, vines, and flowers. The Western village generally presents to the eye of the traveler a coolness and beauty to which many of the older Eastern villages are strangers. True, there are many lovely villages in New-York State, but, as a general rule, I think they will not bear comparison with their younger sisters of the West.

"If the people of the Eastern States do not wake up, they will soon find themselves far in the rear of the West in rural improvement, and that display of the beautiful in nature that goes far, very far, in making home attractive."

YOUNG TREES IN OLD ORCHARDS.—It is always a bad practice to reset young trees in an orchard or in the same holes from which old decayed fruit-trees have been taken away. The reason is this: the rotting and decaying of the trunk and roots produce a fungus exceedingly injurious, tainting the soil. If any one will examine the land, he will find it full of a net-work of decayed wood, and the only way to plant the ground successfully is to grub out the old roots and burn them, apply lime, and cultivate well. Young trees may then do well.

Mr. Wilson C. Flagg, who had extensive orchards at Alton, Ill., replanted several hundred young trees in the same holes from which the old ones had been grubbed out. For vigor of growth and healthfulness of foliage they were equal to any grown on new land; but the reason for this success was the burning of the old trees in the holes. Mr. Flagg attributes his success as much to the power of the heat on the soil as to the ashes.

RHODODENDRONS will not flourish in any soil containing an abundance of calcareous or clayey matter. In almost every other soil they will grow, if enriched with well-rotted leaf-mould. They will do well in a heavy loam or a rich sandy loam, or, in fact, in any loam free from calcareous matter.

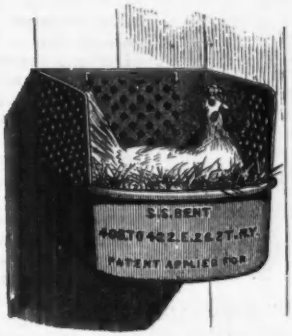


Fig. 1.—A Ventilated Nest.

Fig. 2.—A Plain Nest.

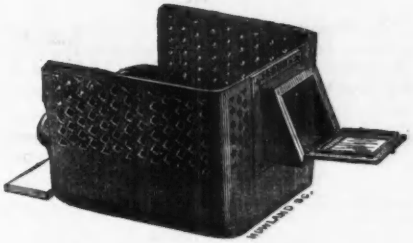


Fig. 3.—Rear View of Nest.

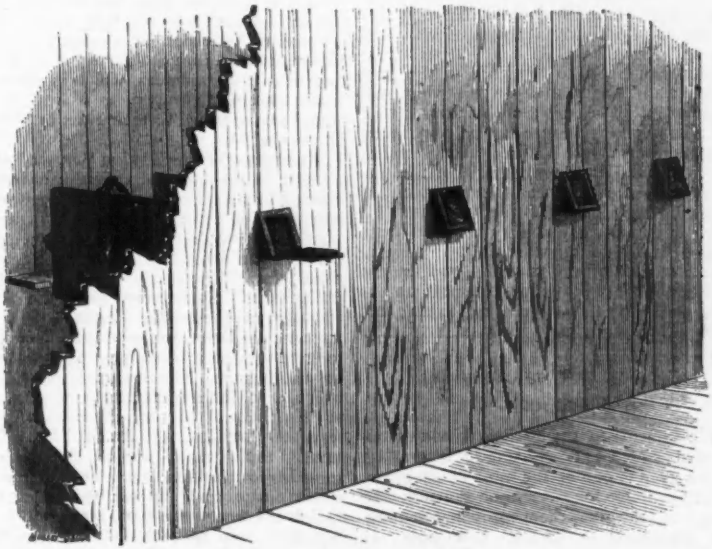


Fig. 4.—A Range of Nests.

Important Notice.

The Editor particularly requests all pomologists, fruit-growers, gardeners, and florists, in all parts of the country, to inform him constantly of the appearance of new varieties of fruits, trees, vines, or seeds, and to send as soon as possible full and impartial descriptions of the same, with specimen for illustration.

The Editor has a test and experimental farm at Dover, Delaware, where all the latest horticultural novelties will be tested before recommendation, and a cordial invitation is extended to all interested to send any new plants or reeds, no matter how many, that may be considered worthy of trial.

Full and impartial reports will appear at the end of each season, and it is expected this will be a feature of good practical interest in The Horticulturist.

An important item in the question of fruit-growing is the availability it gives to the labor of children—than which nothing is better for the boys and girls, if they do not have too much of it.

Poultry.

Iron Nests.

Upon the preceding page, we present illustrations of iron poultry nests, which seem, from their simplicity, to be very suitable for general use. Fig. 1 represents a nest with ventilated sides; and Fig. 2, a plain nest—these are attached by their backs to the walls of the poultry-house; and Fig. 3 shows a rear view, with the door open. The object of this arrangement is that a large poultry-house can be constructed with passageways and boarded partitions, and the nests so fixed on the other side of the partition as to make it an easy matter to collect the eggs through the rear doors, without the necessity of entering the poultry-house, disturbing the hens or soiling the clothes. Fig. 4 shows the outside of the partition, and the end to the right is broken to show the nest on the opposite side. By this system, egg raising and gathering is made cleanly, systematic, and a pleasure.

Poultry.

As the interest in the various kinds of domestic birds seems to be constantly increasing, and as the *duck* is one of the most easily grown and most profitable for farmers or fanciers who are prepared to give them proper attention, I have concluded to devote this paper to a consideration of the merits of that most popular variety known as the Rouen Duck. It is contended by poultry *savants* or *cognoscenti* that the name Rouen is a misnomer; that the proper name of this variety should be *Roan* Duck, as that is descriptive of the color of the male bird; and further, that it is the color of the Wild Mallard, from which the naturalists contend that the now numerous varieties of domestic ducks have descended. But as it is not the purpose of your correspondent to attempt either to settle the origin of any specific variety or to establish the unity of the species, he will proceed at once to the consideration of the particular breed already referred to.

In the color of their plumage both the drake and the duck are the same as the Wild Mallard, so generally known throughout the United States, though they are considerably larger in size. In England as well as in this country, this breed has taken a front rank, as well from its rapid maturity and large size as its superiority as a table fowl. I know of no domestic fowl which matures so rapidly as the duck, or gives a larger return for the care bestowed. With generous feeding, it is not unusual for young drakes to weigh from 5½ to 6½ pounds at from two and a half to three months old. The duck, before desiring to sit, lays a great number of large-sized eggs which are very rich in flavor. The color of their eggs is a sort of bluish green, which are said by Mr. Hewitt, an English breeder of large experience, to be considerably thicker in the shell than the eggs of the Aylesbury Duck, which divides with them the favor of English breeders. Most ducks are apt to lay their eggs at night, and where they have free access to ponds or large streams, they drop their eggs in these, till nature suggests to them the expediency of making provision for a coming progeny. In order to make sure of their eggs when the laying season commences, which is generally the latter part of February or March, the ducks should be confined to their pens or houses during the night.

The editor of the London *Journal of Horticulture*, in his paper of the 18th ultimo, in noticing the poultry show at Birmingham, which was attended by over 44,000 visitors, and where nearly 2000 coops of poultry were on exhibition, employs the following language in referring to the ducks: "The result of duck-breeding is a curious one. Some years since the Aylesbury was always heavy, the Rouen was a bird of feather; the latter, having accomplished feather, took up weight, and has now passed the Aylesbury in the race. The three prize pens of Rouens weighed 55¾ lbs.; respectively, 19¼ lbs., 18¼ lbs., 18¼ lbs.: the Aylesbury collectively, 50¾ lbs.; separately, 17¼ lbs., 17¼ lbs., 16¼ lbs. We were amused to find many persons, during the show, speaking of the Aylesbury and Rouen as the edible ducks, and putting the Black and the Call ducks among the fancy birds. It is a great mistake; both these breeds are excellent for the table, the former being distinguished, even among the good ones." E.